caBIG™ cancer Biomedical Informatics Grid™

42 year old mother has symptoms that are abnormal

Visit PCP → Specialist → Radiologist

Future:
Electronic health record to integrate data from different doctors

undergoes biopsy

Biopsy data entered into free text

Scared and confused, so many different doctors and decisions to make. Where is information?

Has highly treatable form of cancer. Pursues standard of care with good response.

diagnosed with cancer

I have a form of cancer which is not known to be highly treatable. My family and I search many different sources for information.

Tried standard of care but cancer kept recurring. Have decided to consider clinical trial as an option.

I have found some clinical trials through caMATCH which I would like to discuss with my doctor.

caMATCH Helps identify clinical trial

Future:
A trial is identified according to patient's tumor and biology info

caTIES added to clinical trial data

My doctor explains the trial to me and a CRA answers my questions. A week later I decide to sign the informed consent and join the trial.

Data controlled in 3 views based on patient's consent:
1. Full access to limited number of people involved in clinical trial.
2. Limited subset of data accessible by scientists in same protocol.
3. De-identified data at aggregate level available to caBIG community.

enrolls in clinical trial

C3PR Manages this clinical trial across multiple other clinical trials

I undergo ini tial testing and am successfully screened for

additional tests as part of trial, including biopsies and imaging

Future:
As individualized medicine evolves, patients will seek out trials specific to their medical history and ailment and consider participating for most advanced, targeted treatments

imaging data → caIMAGE

biopsy data → caTISSUE Repository of tissue data

C3D Structured protocol model e-CTD/FDA collaboration to streamline regulatory process

have an adverse event

BASIC SCIENCE RESEARCHERS
| BENCH |

CLINICAL RESEARCHERS
| BEDSIDE |

Adverse Event Module of C3D

Future:
Patient data on adverse event can be easily communicated and explored at varying levels of granularity, by both clinical and basic science researchers. Information is seamlessly transported from bedside to bench and back to support personalized medicine.

Protein Expression → proteomic data → Proteomics LIMS → analysis tools → RProteomics

DNA Genotyping → genomic data → HAPMAP → analysis tools → TrAPSS, Magellan

RNA Expression → gene expression data → caARRAY → analysis tools → caWORKBENCH, webCGH

I am successfully treated for an adverse event and continue on the trial

I feel hopeful and continue to improve. It seems I am responding to this treatment option!

FDA

I am responding to treatment in my arm of the trial

I successfully complete the clinical trial

caBIG™ Workspaces and Working Groups